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STATEMENT OF BASIS
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PROPOSED RCRA CORRECTIVE ACTION REMEDY SELECTION FOR SOILS AND PROPOSED DRAFT POST-CLOSURE PERMIT FOR AN EXPANDED FORMER LANDFILL (CORRECTIVE ACTION MANAGEMENT UNIT)

USS-POSCO INDUSTRIES
900 LOVERIDGE ROAD
PITTSBURG, CA
EPA ID NO. CAD 009 150 194

I. SUMMARY

The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this Statement of Basis for the proposed corrective action remedy selection phase for soils at the USS-POSCO Industries (USS-POSCO) plant in Pittsburg, Contra Costa County, California.

A RCRA Facility Assessment (RFA) was prepared by DTSC for the USS-POSCO facility in June of 1994. The RFA identified 44 Solid Waste Management Units (SWMUs) which required a RCRA Facility Investigation (RFI) to determine if there had been releases of hazardous wastes or hazardous constituents.

A RFI was prepared to characterize the SWMUs identified in the RFA. The RFI identified 13 SWMUs which warranted further evaluation for remediation under the Corrective Measures Study (CMS) phase of the RCRA corrective action process. Of these twelve, one has been remediated through a partial remedy selection process (SWMU No. 25: Site L-B) in 1999. One SWMU was added (SWMU No. 35; Abandon Wooden Sewer Area). Three SWMUs have been broken up into subSWMUs. There are a total of 16 SWMUs that require evaluation for corrective action remedies under the corrective action measures study phase of RCRA corrective action.

1. SWMU No. 3: Former Caustic Neutralization Area (Pb)
2. SWMU No. 17.1: Former Power Substation Area #1 (PCBs)

3.	SWMU No. 24.1:	Site L-A Dried Sludge Disposal Areas (As)
4.	SWMU No. 24.3E:	Site L-A Lead Scale Disposal Areas East (Pb)
5.	SWMU No. 24.3C:	Site L-A Lead Scale Disposal Areas Central (Pb)
6.	SWMU No. 24.5-1:	Site L-A Oil Disposal Area #1 (As, PCBs)
7.	SWMU No. 24.5-3:	Site L-A Oil Disposal Area #3 (As, VOCs)
8.	SWMU No. 24.5-4:	Site L-A Oil Disposal Area #4 (As)
9.	SWMU No. 24.8:	Site L-A Lead Impacted Area (Pb)
10.	SWMU No. 24.2:	Open Hearth Furnace Slag Disposal Area (Pb)
11.	SWMU No. 35	Abandoned Wooden Sewer Area (TPH)
12.	SWMU No. 4:	Former Wire Mill (VOCs)
13.	SWMU No. 6.2:	New Coil Marshaling Area (As)
14.	SWMU No. 1:	Arsenic Impacted Soils Area ((As)
15.	SWMU No. 8:	Coal Tar Pitch Impacted Soils Area (PAHs, Benzene)
16.	SWMU No. 6.1	Old Central Coil Storage Area (PAHs)

note: The constituent of concern is indicated in parenthesis after each SWMU.
Pb=lead, PCBs=polychlorinated biphenyls, As=arsenic, TPH=total petroleum hydrocarbons, VOCs=volatile organic compounds, PAHs=polycyclic aromatic hydrocarbons.

The RFI used health-based soil screening levels based on a site-specific risk assessment for industrial/commercial land use. Screening for construction worker safety used values prepared in the 1993 AOC Report. The hazardous Constituents of Concern (COCs) are arsenic, lead, nickel, polynuclear aromatic hydrocarbons (PAHs), oil and grease, and polychlorinated biphenyls (PCBs).

A Corrective Measures Study Workplan was prepared for the site on November 12, 1999. A second site-specific health based risk assessment for industrial/commercial using more refined methodology was employed to generate soil cleanup levels for the site. The CMS Workplan described how remediation alternatives would be evaluated for the soils phase. A CMS Report was prepared on August 2, 2000 which, along with the CMS Workplan presented alternative remedies for contaminated soils at the site. In conjunction with the CMS Report, and CAMU Designation request was prepared on August 4, 2000, a Remediation and Confirmation Sampling and Analysis Plan was prepared on August 3, 2001, and a PCB Sampling and Analysis Plan was prepared on August 3, 2001. The following remedies are proposed for the soils phase of RCRA Corrective Action. These remedies apply to SWMUs for which it has been determined that there has been no impact to groundwater:

1. Remediation of Soils Above Industrial/Commercial Safety Levels

Soils with levels of hazardous constituents above the health based levels for

industrial /commercial workers will be excavated. Soils above these levels have been determined by a site-specific human health based risk assessment to be unsafe for unprotected industrial/commercial. The excavated soils will be analyzed to determine if they are RCRA hazardous or non-RCRA hazardous wastes.

a. RCRA hazardous wastes, all PCB wastes, and any waste determined to be a potential threat to groundwater will be disposed of at an authorized off-site disposal facility. This proposed remedy applies to items numbered 2, 5, 6, and 8 in the above list of SWMUs.

b. Non-RCRA wastes, with the exception of PCB wastes, shown not to be a threat to groundwater will be placed into an existing non-RCRA landfill at the site. This landfill will be expanded to accept the additional waste. A Post-Closure Permit is proposed to authorize the placement of these non-RCRA wastes into the landfill unit. This remedy applies to items numbered 1, 3, 4. 7, and 9 in the above list of SWMUs.

2. Remediation of Soils with a Significant Potential to be Above Construction Worker Safety Levels

For item number 10 (SWMU 24.2, Open Hearth Furnace Slag Disposal Area), there exists a significant potential for the presence of as yet undiscovered soils with lead above levels considered safe for unprotected construction workers based on site-specific health based risk assessment. As a precautionary measure, a deed restriction will be imposed on the surveyed unit with the requirement that prior to any construction activities requiring soil movement or soil disruption, the landowner will submit site-specific health and safety plans (SSHSPs) signed and approved by a California registered industrial hygienist to DTSC. The plans would specify personal protective equipment and control measures for construction workers.

For SWMUs not addressed in Sections I.1 and I.2 above (items 11, 12, 13, 14, 15, and 16), remedies will be addressed in a future RCRA corrective action project addressing groundwater remediation. For further information on this issue see section VIII of this document entitled: *SITE-WIDE GROUNDWATER REMEDIATION: SWMUs NOT ADDRESSED IN THIS PROJECT DUE TO GROUNDWATER RELATED ISSUES AND/OR UNRESOLVED SOIL ISSUES***.**

II. FACILITY HISTORY

USS-POSCO Industries is a partnership between United States Steel Corporation (formerly known as USX Corporation) of Pittsburgh, Pennsylvania, and POSCO (formerly known as Pohang Iron and Steel Co., Ltd.) of Korea. The partnership was formed in 1986.

United States Steel owned the plant before 1986. Steel manufacturing and finishing have been conducted at the plant since 1909.

Historically, steel was manufactured in open-hearth furnaces and then finished by various processes. Finished steel products included sheet steel, wire rope, nails, and pipe. At present, USS-POSCO operations consist only of steel finishing; no molten steel manufacturing occurs at the plant. USS-POSCO receives coils of hot-rolled steel from off-site sources and produces cold-rolled steel, galvanized steel, and tin- or chromium-plated steel through the processes of cold reduction, annealing, and finishing.

A number of materials and chemicals have been used in manufacturing operations. Hazardous and nonhazardous wastes generated from these operations have been managed in both on-site and off-site treatment, storage, and disposal units.

III. ENVIRONMENTAL SETTING

The USS-POSCO plant occupies 483 acres in the City of Pittsburg. The plant is located at 900 Loveridge Road, north of the Pittsburg-Antioch Highway, south of the New York Slough, and east of Suisun Bay. Residents and light industry border the plant on the west and south. Dow Chemical borders the plant on the northeast corner. The Burlington Northern and Santa Fe (BNSF) railroad bisects the plant in the east-west direction (see Figure 1).

Kirker Creek runs along the Pittsburg-Antioch Highway on the southern border of the plant. Most surface runoff within the plant is collected and diverted to storm drains. The storm drains direct the flow to the USS-POSCO wastewater treatment plant. Treated water is discharged to the New York Slough in accordance with a National Pollutant Discharge Elimination System permit. The New York Slough, a tributary of the San Joaquin River, abuts the northern border of the plant.

Groundwater at the plant is not used for drinking water and has not been shown to be connected to the City of Pittsburg drinking water aquifer.

IV. HYDROGEOLOGIC CONDITIONS

Data from soil borings and monitoring wells at the USS-POSCO plant indicate that groundwater occurs in the following two general hydraulic zones:

- An unconfined upper groundwater-bearing zone, extending from an average 10 to 80 feet below ground surface, and consisting primarily of silts and silty clay interbedded with laterally discontinuous silty to clayey sand lenses; and

- A confined lower groundwater-bearing zone comprising the main aquifer in the area, consisting of sand and gravel averaging 70 feet in thickness, the top of which occurs at an approximate depth of 90 to 100 feet below ground surface.

Groundwater flow is generally to the north towards the New York Slough. The upper and lower groundwater-bearing zones are separated by a silty-clay aquitard. Historic salt-water intrusion due to over-pumping in the lower groundwater-bearing zone has degraded the groundwater resource and indicates that there is hydraulic communication with New York Slough (Part B Application, May 25, 2001). A limited number of shallow wells, which have been in the past used for small business and domestic needs, have been identified within a quarter mile of the USS-POSCO plant. These wells are all located upgradient of the USS-POSCO plant. The City of Pittsburg has wells within a mile of the USS-POSCO plant that are located upgradient and/or co-gradient to the USS-POSCO plant. (Part A Application, May 25, 2001.)

A thick section of hard clay lies below the main aquifer and is considered to be old bay mud deposits. Depth to bedrock is estimated to be between 400 and 800 feet below ground surface. The vadose zone varies from the top seven feet near the slough, to the top 20 feet in the southern area of the plant away from the slough.

Parts of USS-POSCO plant are within the hundred-year flood zone. The flood zone, however, does not impinge on the area of the proposed Post-Closure Permit for the former Unit I landfill.

V. HISTORY OF CORRECTIVE ACTION

V.1 RCRA Facility Assessment (RFA)

In June 1993, USS-POSCO submitted an Updated RCRA Part A Permit Application and an application for a RCRA Part B Permit Renewal to DTSC, which triggered the corrective action process for the plant. A RCRA Facility Assessment was completed by DTSC in June 1994, which identified 44 SWMUs that had or could release hazardous constituents to environmental media.

V.2 RCRA Facility Investigation (RFI)

A RFI Workplan was completed and submitted to DTSC in July 1996. Based upon the evaluations described in the Workplan, 19 of the 44 original SWMUs warranted further investigation. A RFI Final Report was completed and submitted to DTSC in April 1998. During the RFI, an additional SWMU was identified. A health- based risk assessment was prepared to screen SWMUs for levels of contaminants which might adversely effect either

industrial/commercial workers or construction workers. 12 SWMUs evaluated during the RFI had residual chemicals at concentration exceeding the RFI screening criteria thus requiring inclusion in the CMS phase of the corrective action process.

V.3 Health Risk Assessment

A second site-specific health risk assessment for industrial/commercial workers working near impacted soils at the site, using more refined methods than those used in the screening health risk assessment developed for the RFI (see above), was completed for the site in 1998. This assessment was submitted to DTSC in a document entitled, "Derivation of Site-Specific Soil Cleanup Levels" in October 16, 1998, final report dated June 17, 1999. Site-specific, risk-based soil cleanup levels were derived for the following chemicals: arsenic, lead, nickel, potentially carcinogenic polynuclear aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs). DTSC approved the new industrial/commercial cleanup levels for all chemicals submitted with the exception of PCBs. In a letter dated May 31, 2000, USS-POSCO informed USEPA and DTSC that they would proceed with the corrective action process using the PCB self-implementing soil cleanup levels allowed by the MEGA Rule [Code of Federal Regulations, Title 40 (40 CFR), Part 761.61(a)].

Due to the difficulties in assessing cancer risk from short term exposure, the new risk assessment did not include levels for construction workers. Therefore, the screening risk assessment used in the RFI will be used for remedies addressing construction worker safety.

Offsite residential inhalation exposures from anticipated remedial activities were evaluated in a report entitled "Evaluation of Offsite Residential Inhalation Exposures from Remedial Activities, July 31, 2000". The evaluation focused on the equipment and activities associated with anticipated remedial activities and found a cumulative cancer impact of less than one in ten million and a non-carcinogenic hazard index of less than one (i.e. no adverse human health effects expected).

V.4 CMS Workplan

A CMS Workplan was submitted to DTSC in November 1999. The CMS Workplan documented the evaluation of corrective measure requirements for 11 of the 12 SWMUs warranting inclusion in the CMS phase of the corrective action process. SWMU No. 25 (Site L-B), one of the 12 SWMUs identified in the RFI Final Report as warranting inclusion in the CMS phase, was addressed in a separate CMS proposed remedy selection by USS-POSCO in 1999. This was a separate CMS because of the anticipated construction of an energy production plant on 12 acres of Site L-B.

The CMS Workplan sets out information to be presented in the CMS Report, including remediation alternatives. These alternatives would include treatment (chemical or biological), excavation and disposal to the on-site landfill, excavation and disposal to an off-site landfill, or leaving the waste in place. Treatment alternatives were evaluated based upon the type of contaminant and which treatments would be appropriate for that type of waste. Alternatives were evaluated based upon cost, location of SWMU (in an active or non-active portion of the facility), volume of soils and potential risk to industrial/commercial workers and construction workers.

V.5 CMS Report and Remediation Confirmation Sampling and Analysis Plans

The CMS Report dated August 2, 2000 is the basis for the proposed remedy selection for soils. Section VI of this document provides details from the CMS report and the proposed remedies for the SWMUs. Associated with the CMS Report is a Remediation and Confirmation Sampling and Analysis Plan and the Self Implementation of On-Site Cleanup and Disposal of PCB Remediation Material/Soil, both dated August 3, 2000, which specify the sampling procedures to be used after excavation.

VI. PROPOSED RCRA CORRECTIVE ACTION REMEDY SELECTION FOR SOILS

This section addresses 10 of the 16 SWMUs listed in section I to be considered in this soils remediation phase of corrective action remedy selection. The remaining SWMUs will be addressed in a future groundwater phase of corrective action remedy selection.

The administrative mechanism for implementation of corrective action at this site is a consent agreement. A consent agreement for implementation of corrective action was entered into by UPI and DTSC in June, 1998. Upon approval of the remedies for the SWMUs addressed by this project, the consent agreement will be amended to reflect the conditions and time constraints for implementing those remedies. In addition, the consent agreement will lay out the remaining steps required for remediation of SWMUs not addressed in this project and remediation of groundwater.

For SWMUs containing COCs in soils which exceed industrial/commercial cleanup levels, which exceed allowable low occupancy levels for PCBs, or which exceed construction worker safety levels, the proposed remedy is excavation and disposal either at an on-site landfill (Corrective Action Management Unit) or an appropriate off-site facility.

For SWMU 24.2, all soils which have been identified with soils meeting the above criteria will be excavated and are identified with alternate SWMU numbers (24.3, 24.8, etc. See figure 1 for clarification). However, a significant potential remains for the presence of as yet undiscovered impacted soils within this 53 acre SWMU with lead levels above construction worker safety levels. As a precautionary measure, a deed restriction will be imposed on the surveyed unit with the requirement that prior to any construction activities requiring soil movement or soil disruption within the area, the landowner will submit site-specific health and safety plans (SSHSPs) to DTSC. These SSHSPs will be approved by a registered California industrial hygienist. The plans would specify personal protective equipment (e.g., face masks, protective clothing, etc.) and control measures (e.g., sprinklers, covers, etc.) to protect construction workers from exposure to impacted soils.

All SWMUs in the remedy will be deed restricted for industrial/commercial use. A deed restriction will be required that limits property usage to industrial/commercial activities only. In addition, no agricultural activities such as raising of livestock or food production, schools, child care centers, hospitals, or residential buildings of any kind will be allowed on the property.

Appendix 1 to this Statement of Basis provides detailed results of soil and groundwater sampling associated with all SWMUs at the facility .

(1) SWMU No. 3: Caustic Neutralization Area

Lead concentrations in soils are below the industrial/commercial worker cleanup level of 5,500 ppm and exceed the construction worker screening level of 1,200 ppm. The volume of impacted soils in this area is approximately 920 cubic yards. No groundwater impacts from this SWMU were detected. Alternative remedies include 1) leave soils in place and require a deed restriction requiring SSHSPs for excavation work, and 2) excavation and disposal. Due to the small volume of this SWMU, the proposed remedy is to excavate the impacted soils and place them into the on-site Unit 1 CAMU. Soils will be tested to determine if they are non-RCRA. RCRA wastes will be disposed at a RCRA authorized off-site landfill.

(2) SWMU No. 17.1: Former Power Substation No. 1 Area

PCB concentrations in SWMU soils are greater than those mandated in the federal TSCA (Toxic Substances Control Act) regulations; 25 ppm for low occupancy (MEGA Rule, Code of Federal Regulations, CFR 40, Part 761.61(a)). The estimated volume of impacted soils from this SWMU in excess of the TSCA cleanup level of 25 ppm is 21 cubic yards. This SWMU is located in an inactive area of the site. No groundwater impacts

have been detected from the SWMU. Alternative remedies include 1) ex-situ bioremediation, 2) chemical stabilization, 3) off-site disposal to landfill, and 4) capping and fencing. Due to the low volume of wastes and location in an inactive area of the site, the proposed remedy is excavation and disposal in an off-site landfill of all soils exhibiting PCB contamination above 25 ppm. Bioremediation or chemical stabilization is not considered practical or cost effective for this small amount of waste material. A deed restriction specifying use restrictions for low occupancy use will be required for this area if soils with PCB concentrations between 1 ppm and 25 ppm are left in place. Should PCB concentrations in SWMU soils be below 1 ppm after remediation, then a deed restriction will not be required.

The construction worker screening level for PCBs of 100 ppm will not be exceeded by soils left in place at this SWMU.

(3) SWMU No. 24.1: Site L-A - Dried Sludge Disposal Areas

Arsenic concentrations in dried sludge and underlying soils exceed the site-specific soil cleanup level of 160 ppm calculated for the industrial/commercial worker. The estimated volume of impacted soils is 81,800 cubic yards and is at or above surrounding ground level. The SWMU is not currently covered and is not within a currently active portion of the facility. Alternative remedies for this area include 1) cover in place, 2) chemical treatment, 3) soil washing, 4) excavation and disposal in an off-site regulated landfill, 5) excavation and placement in an on-site regulated landfill. Because the soils are easily accessible (shallow), and the SWMU is in an inactive portion of the site, the proposed remedy is excavation and disposal to an appropriately permitted landfill. Placement in the on-site landfill is preferred over off-site disposal due to lower costs and minimal transportation impacts. Disposal to the proposed on-site landfill is an option if this waste is determined to be non-RCRA. If the waste is determined to be RCRA hazardous waste, the waste will be disposed of in an off-site permitted disposal facility. Soils left in place shall not exceed either the industrial/commercial cleanup value for lead (160 ppm) or the construction worker screening value (230 ppm).

(4) SWMU No. 24.3E: Site L-A - Lead Scale Disposal Areas East

Lead concentrations in lead scale beneath the current cover of soil exceed the lead site-specific soil cleanup level calculated for the industrial/commercial worker and screening levels for construction workers. The estimated volume of impacted soils is 40 cubic yards. No groundwater impacts from this SWMU were detected. Remedy alternatives include 1) requiring maintenance of the current one foot soil cover, 2) requiring a new gravel or asphalt cover of the SWMU, or 3) excavation of soils and disposal to an appropriately permitted landfill.

Due to the small volume of this SWMU, the proposed remedy is excavation and disposal to an appropriately permitted landfill . Disposal to the proposed on-site landfill is an option if this waste is determined to be non-RCRA.

(5) SWMU No. 24.3C: Site L-A - Lead Scale Disposal Areas Central

Lead concentrations in lead scale beneath the current cover of soil exceed the lead site-specific soil cleanup level calculated for the industrial/commercial worker and screening levels for construction workers. The estimated volume of impacted soils is 160 cubic yards. Groundwater impacts from this SWMU were indeterminate. Remedy alternatives include 1) addition of groundwater wells in the vicinity of the SWMU and requiring maintenance of the current one foot soil cover, 2) addition of groundwater monitoring wells and requiring a new gravel or asphalt cover of the SWMU, or 3) excavation of soils and disposal to an appropriately permitted landfill.

Due to the small volume of this SWMU, the proposed remedy is excavation and disposal to an appropriately permitted off-site landfill.

(6) SWMU No. 24.5-1: Site L-A - Oil Disposal Area #1

ODA #1 oily waste is currently exposed at the ground surface with arsenic concentrations above the site-specific soil cleanup level calculated for the industrial/commercial worker and with PCB concentrations above the MEGA Rule (CFR 40 Part 761.61(a)) low occupancy soil cleanup level of 25 ppm. The estimated volume of impacted soils is approximately 1,040 cubic yards. This SWMU is located in an inactive area of the site. No groundwater impacts from this SWMU have been detected. Alternatives for remediation include 1) bioremediation and chemical stabilization, 2) capping and fencing, and 3) excavation and disposal to an off-site landfill. Due to the small volume and location in an inactive area of the site, the proposed remedy is to excavate and dispose off-site all soils impacted with COCs above the industrial/commercial cleanup levels. A deed restriction will stipulate the use restriction (i.e., low occupancy as stipulated in the MEGA Rule) for areas with soils impacted with PCBs between 1 and 25 ppm. Should PCB concentrations in SWMU soils be below 1 ppm after remediation, then a deed restriction for low-occupancy will not be required.

The construction worker screening level for PCBs (100 ppm) and arsenic (230 ppm) will not be exceeded by soils left in place at this SWMU.

(7) SWMU No. 24.5-3: Site L-A - Oil Disposal Area #3

For ODA #3, oily waste is currently exposed at the ground surface with arsenic concentrations above the site-specific soil cleanup level calculated for the industrial/commercial worker. One sample from this SWMU tested positive for VOCs (ethylbenzene at 2.5 ppm, toluene at 1.3 ppm, and xylene at 23 ppm). The estimated volume of impacted soils is 4,000 cubic yards. Groundwater has not been impacted by this SWMU. Alternatives for remediation include 1) excavation for off-site disposal, 2) excavation for on-site disposal. The SWMU is not currently covered and is not within a currently active portion of the site. The proposed remedy is excavation and disposal to an appropriately permitted landfill. Placement in the on-site landfill is preferred over off-site disposal due to lower costs and minimal transportation impacts. Disposal to the proposed on-site landfill is an option if this waste is determined to be non-RCRA. If the waste is determined to be RCRA hazardous waste, the waste will be disposed of in an off-site permitted disposal facility.

(8) SWMU No. 24.5-4: Site L-A - Oil Disposal Area #4

For ODA #4 oily waste is currently exposed at the ground surface with arsenic concentrations above the site-specific soil cleanup level calculated for the industrial/commercial worker. The estimated volume of impacted soils is 100 cubic yards. Groundwater impacts are indeterminate. Alternatives for remediation include 1) excavation for off-site disposal or 2) chemical treatment. The SWMU is not currently covered and is not within a currently active portion of the site. The proposed remedy is excavation and disposal to an appropriately permitted off-site landfill.

(9) SWMU No. 24.8: Site L-A - Lead Impacted Area

Lead concentrations in lead scale beneath the current cover of soil exceed the lead site-specific soil cleanup level calculated for the industrial/commercial worker and screening levels for construction workers. The estimated volume of impacted soils is 7,500 cubic yards. No groundwater impacts from this SWMU were detected. Remedy alternatives include 1) requiring maintenance of the current one foot soil cover, 2) requiring a new gravel or asphalt cover of the SWMU, or 3) excavation of soils and disposal to an appropriately permitted landfill.

Due to the small volume of this SWMU, the proposed remedy is excavation and disposal to an appropriately permitted landfill. Disposal to the proposed on-site landfill is an option if this waste is determined to be non-RCRA.

(10) SWMU No. 24.2: Open Hearth Furnace Slag Disposal Area

This is a 53 acre area which is suspected of containing lead above construction

worker screening levels of 1200 ppm. Random sampling of the area identified a number of locations with lead levels above industrial/commercial cleanup levels (5500 ppm) and/or construction worker screening levels (1200 ppm). These levels are identified in SWMU No. 24.3 (see above). The SWMU 24.2 is being deed restricted for construction worker health and safety requirements as a precautionary remedy only because of the size and history of this SWMU indicates a significant possibility of remaining pockets of residual lead scale above the construction worker screening level. This area will be deed restricted requiring a SSHSP be prepared prior to any future grading or excavation at this SWMU. The SSHSP will identify appropriate personal protective equipment for construction workers and will be signed by a California registered industrial hygienist.

VII. PROPOSED CORRECTIVE ACTION MANAGEMENT UNIT (CAMU) AND POST-CLOSURE PERMIT TO AUTHORIZE CAMU IMPLEMENTATION

VII.1 Basis for the Corrective Action Management Unit (CAMU) and Proposed Post-Closure Permit for the Unit 1 Landfill

In February 1993, USEPA issued the final rule for CAMUs, Corrective Action Provisions Under Subtitle C (Federal Register, Volume 58, page 8658). California adopted regulations (California Code of Regulations, title 22, division 4.5, chapter 14, section 66264.552) equivalent to the federal CAMU rule on June 29, l995.

A CAMU is defined as an area within a plant that is designated for the purposes of implementing corrective action requirements. A CAMU shall only be used for the management of remediation material/soil pursuant to implementing such corrective action requirements at the plant.

In accordance with the California Hazardous Waste Control Act, California Health and Safety Code Section 25100 et seq., USS-POSCO submitted a permit application (Part A and B) for corrective action and post-closure maintenance of a planned CAMU to be located within the existing USS-POSCO plant. The Post-Closure Permit application was submitted to DTSC on May 25, 2001. The area within the USS-POSCO plant site to be designated as a CAMU is Unit I, the closed hazardous waste landfill within Site L-B. The planned CAMU (hereafter referred to as the Unit I CAMU) will receive material/soil from the majority of SWMUs to be remediated and from only those SWMUs that (1) have not impacted groundwater and (2) have COCs below hazardous waste levels regulated by the USEPA. Material/soil from the remaining SWMUs will be directed to off-site hazardous waste facilities.

USS-POSCO has proposed creating the CAMU by expanding Unit I, which was permitted by DTSC in 1995 for wastes with COCs below hazardous waste levels regulated

by the USEPA. The landfill was closed and a post-closure maintenance plan was approved December 28, 1995.

At the time of closure, approximately 130,800 cubic yards of California-only hazardous waste (i.e., not USEPA regulated) were in place. Chemicals in this waste include metals, oil and grease (O&G) and total petroleum hydrocarbons (TPH). The two primary waste materials were wastewater treatment sludges and associated soils (approximately 78,300 cubic yards) and Biofarm soils (approximately 47,800 cubic yards) from the closure of former surface impoundments. Unit I wastes were placed on native soils without a liner. The footprint of the closed landfill is approximately eight acres. At its highest point, the landfill is approximately 24 feet above the surrounding ground surface. The landfill was closed with an engineered final cover consisting of a foundation layer (compacted Biofarm soils), a geosynthetic clay layer (Claymax^{TM}), a geosynthetic drainage layer, a filter fabric, and a vegetation/soil layer.

Unit I began operation in 1978 and was built with its base at the existing ground surface. Depth to groundwater in the area is typically 9 to 16 feet. Soil borings through the landfill completed in 1992 showed that the bottom of the landfill has settled a number of feet below the surrounding ground surface due to the weight of the landfill consolidating compressible soils beneath the landfill. The proposed expansion of Unit I would increase the footprint of the landfill to 10 acres and increase the height by approximately nine feet. The CAMU would add approximately 94,000 cubic yards of remediation material/soil to Unit I (See figures 2 and 3).

Most (87 percent) of the remediation material/soil that will be generated during corrective action at the USS-POSCO plant and that has been recommended for placement in the Unit I CAMU will originate from one SWMU, No. 24.1: Site L-A - Dried Sludge Disposal Areas. Approximately 81,800 cubic yards of dried sludge and underlying soil will need to be excavated and placed into the Unit I CAMU. The Site L-A dried sludge was generated from former wastewater sludge drying beds and was deposited on Site L-A from 1972 to 1978. Thereafter, dried sludge was deposited in Unit I on Site L-B. COCs in SWMU No. 24.1 dried sludge are similar to dried sludge already in Unit I with the exception of arsenic. The maximum reported arsenic level in SWMU No. 24.1 dried sludge is 1200 parts per million (ppm). The average arsenic level in SWMU No. 24.1 dried sludge, based on 10 samples, is 127 ppm. The source of this arsenic is believed to be refractory brick from old foundry hearths. Based on the results of the USS-POSCO plant-wide groundwater monitoring program, SWMU No. 24.1 dried sludge has not impacted groundwater and is not expected to impact groundwater in the future because of the time that the dried sludge has been sitting in the soil at Site L-A (approximately 29 years).

The weight of material to be placed at Unit I will cause additional estimated soil consolidation (i.e., settlement) below the landfill of approximately 9 inches.(Part B Application, May 25, 2001). The saturated soil zone is located 9 to 16 feet below ground surface. The CAMU will have an engineered final cover similar or equivalent to the current Unit I cover and the new cover will be integrated into the existing cover.

The increase in the degree of saturation of the existing Unit I waste was found to be insufficient to fully saturate the waste under the existing and the planned loads (the addition of SWMU remediation material/soil). The initial degree of saturation was estimated to be 79 percent and after loading, the final degree of saturation was computed to approximately 80 percent. Therefore, full saturation (i.e., degree of saturation equal to 100) would not be achieved, and pore fluid in the existing Unit I waste would not be expected to migrate downward towards groundwater as a result of the placement of SWMU remediation material/soil (Part B Application, May 25, 2001).

The expansion of Unit I for placement of remediation materials/soils will occur upgradient and to the south of the existing Unit I footprint. The former upgradient well cluster, consisting of monitoring wells M-01, M-01B, and M-01D, monitored the upper and intermediate-depth intervals of the upper groundwater-bearing zone and the lower groundwater-bearing zone, respectively. This well cluster was abandoned (i.e., destroyed and sealed) because it is located in the expansion area. Well abandonment was carried out in compliance with the “Final Draft of California Well Standards, Bulletin 74-90 (California Well Standards)”. Additionally, for wells subject to abandonment by over-drilling, a stinger (i.e., a directional control device) was placed on the over-drilling bit to prevent drill bit drift during the abandonment.

Monitoring wells M-01 and M-01B will not be replaced because groundwater collected from another upgradient well cluster consisting of monitoring wells M-01F and M-01G (monitoring the upper and intermediate-depth intervals of the upper groundwater-bearing zone, respectively) is more representative of background water quality in the upper groundwater-bearing zone. Monitoring well M-01D, a lower groundwater-bearing zone monitoring well, was relocated to the vicinity of the M-01F and M-01G well cluster. Because of a submerged well screen in monitoring well M-01G, monitoring well M-01G was reinstalled with the top of the well screen above historical groundwater depths.

The downgradient well cluster, consisting of monitoring wells M-04 and M-04D, monitors the intermediate-depth interval of the upper groundwater-bearing zone and the lower groundwater-bearing zone, respectively. A new well (to be designated (M-04S) was installed at this cluster location to monitor the shallow-depth interval of the upper-groundwater-bearing zone.

VII.2 CAMU Criteria

DTSC has made the following findings in regard to the seven criteria listed in Cal. Code Regs., title 22, section 66264.552(c) used for determining the appropriateness of designating a CAMU:

1. *The CAMU shall facilitate the implementation of reliable, effective, protective, and cost-effective corrective action measures.*

The project will include moving soils, currently in an unprotected environment and which have been historically shown not to be a threat to groundwater, into a landfill with an engineered final cover (i.e., closure cap), an extensive groundwater monitoring system and an established post-closure maintenance program. Monitoring reports are reviewed by DTSC. DTSC also inspects the landfill on a regular basis.

Soils placed in the Unit I CAMU will be compacted to increase structural stability. The engineered final cover will consist of a foundation layer (compacted dried sludge), a geosynthetic clay layer, a geosynthetic drainage layer, a filter fabric, and a vegetation/soil layer. The Unit I CAMU will be fenced as is currently the case with Unit I. No construction will be allowed on the capped Unit I CAMU beyond maintenance activities.

2. *Waste management activities associated with the CAMU shall not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes, hazardous substances, or hazardous constituents.*

Adequate dust suppression methods will be required during the construction of the Unit I CAMU to prevent excessive dust formation. Workers will be required to wear protective equipment (as identified in required SSHSPs) when working with or around soils with hazardous chemicals at levels above health based levels developed for construction workers.

Off-site residential inhalation exposures from remediation excavation and construction activities have been evaluated ("Evaluation of Offsite Residential Inhalation Exposures from Remedial Activities**,** July 31, 2000"). No significant impacts are expected from excavation and construction activities as long as adequate dust suppression methods are employed.

The Unit I CAMU will be capped with an engineered final cover. No liner will be placed under the CAMU, however, none of the COCs in the SWMU remediation material/soil to be placed in the Unit I CAMU have been shown to have impacted

groundwater at statistically significant concentrations.

3. *The CAMU shall include uncontaminated areas of the facility, only if including such areas for the purpose of managing remediation waste is more protective than management of such wastes at contaminated areas of the facility.*

The planned Unit I CAMU will be located in an area already considered "contaminated" by DTSC.

4. *Areas within the CAMU, where wastes remain in place after closure of the corrective action management unit, shall be managed and contained so as to minimize future releases, to the extent practicable.*

The closure cap (i.e., engineered final cover) will prevent the direct contact of rainwater with the underlying remediation material/soil and reduce infiltration of water as well as fugitive dust. Surface runoff systems will be in place to further reduce the amount of water contacting the remediation material/soil in the Unit I CAMU. Post-closure requirements will include groundwater monitoring and maintenance.

5. *The CAMU shall expedite the timing of corrective action activity implementation, when appropriate and practicable.*

Construction of the Unit I CAMU is not expected to take appreciably longer than the alternative corrective actions evaluated in the CMS.

6. *The corrective action management unit shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-tem effectiveness of corrective actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU.*

The remediation material/soil proposed for placement into the Unit I CAMU have been shown not to be a threat to groundwater. Therefore, treatment is not necessary.

7. *The CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the corrective action management unit.*

Alternative corrective actions evaluated in the CMS would leave wastes spread over a minimum 13 acre area. The Unit I CAMU will increase the footprint of Unit I by two acres. Therefore, use of the Unit I CAMU will reduce the land area occupied by the SWMU soils by a minimum of 11 acres or 85%.

Based on the information available, including historical data on groundwater throughout the USS-POSCO plant and at the Unit I landfill, DTSC believes a Unit I CAMU is protective of human health and the environment. To maintain its status as a California-only hazardous waste facility, the Unit I CAMU will be prohibited from receiving remediation material/soil regulated by USEPA (e.g., soils with PCB concentrations greater or equal to 50 ppm). The Unit I CAMU will also be prohibited from receiving remediation material/soil from SWMUs warranting remediation because of potential groundwater impacts (e.g., coal tar pitch product from SWMU No. 8). DTSC will issue a post-closure permit for the Unit I CAMU.

VIII. SITE-WIDE GROUNDWATER REMEDIATION: SWMUs NOT ADDRESSED IN THIS SOILS REMEDIATION PHASE DUE TO GROUNDWATER RELATED ISSUES AND/OR UNRESOLVED SOIL ISSUES

Remedies for the following six SWMUs are not addressed in this soils remediation phase. These SWMUs will be evaluated for remediation under a separate corrective measures study for groundwater at this site. A CMS Workplan will be submitted to DTSC at a future date.

, SWMU No. 35, Abandon Wooden Sewer Area - soils impacted with TPH (non-hazardous), some of which has been excavated and stockpiled on-site, will be addressed in the next phase of the corrective action remedy selection.

, SWMU No. 4: Former Wire Mill - contamination appears to primarily associated with groundwater. Remedies for groundwater contamination, and, if indicated, soil contamination, will be addressed in the next phase of remedy selection for groundwater.

, SWMU No. 6.2: New Coil Marshaling Area - groundwater impacts from arsenic are of concern and will be addressed in the next phase of remedy selection for groundwater.

, SWMU No. 1: Arsenic Impacted Area - contains arsenic in soils exceeding both industrial/commercial cleanup levels and construction worker screening levels. Groundwater protection and protection of industrial workers and construction workers from impacted soils at this SWMU are of concern. Existing covers [18 inches of compacted gravel (25%) or 10 inches of concrete (75%)] on the SWMU protect site workers from exposure to

impacted soils. No construction will take place on the SWMU until a final remedy has been approved. DTSC is delaying a decision on the remedy for this SWMU until the next phase of remedy selection for groundwater.

, SWMU No. 8: Coal Tar Pitch Area - contains PAHs in soil which have impacted groundwater. DTSC is delaying a decision on the remedy for this SWMU until the next phase of remedy selection due to the groundwater involvement.

, SWMU No. 6.1, Old Coil Storage Area - PAHs exist in one hot spot at levels above industrial cleanup levels (6.3 ppm) in an active area of the POSCO facility. Determination needs to be made as to the level of PAHs which may remain on-site without the potential for groundwater impacts.

IX. GROUNDWATER MONITORING PROGRAM AND RESULTS

The USS-POSCO plant-wide Groundwater Monitoring Program (GMP) was approved as part of the RFI Workplan. A brief description of the program is presented here to assure the public that the groundwater is being monitored and groundwater investigations are in progress. In the next phase of RCRA corrective action, DTSC will propose remedies for groundwater impacts.

The GMP was developed to evaluate hydrologic and water quality conditions upgradient and downgradient of the entire plant, as well as specific SWMUs within the plant. Three primary east-west aligned rows of groundwater monitoring wells were established to monitor upgradient and downgradient conditions at the plant. These well rows, identified as the Southern, Central, and Northern rows, divide the plant into southern and northern areas and are considered the primary well rows. The northern wells are considered plant boundary wells. To monitor groundwater conditions for specific SWMUs within the northern portion of the plant, two intermediate well rows and Site L-B (Units I and II) monitoring wells were added to the GMP.

One of the initial premises of the GMP was that shallow groundwater within the upper groundwater-bearing zone would be evaluated first, followed by an evaluation of deeper groundwater, if warranted, after the evaluation of the shallow groundwater. Because of the detections of volatile organic compounds (VOCs) in the shallow groundwater that are considered "sinkers" (i.e., chemicals with specific gravity greater than water), intermediate groundwater monitoring wells were installed to monitor the deeper interval within the upper groundwater-bearing zone along the northern USS-POSCO plant boundary.

Site L-B, the proposed location of the Unit I CAMU, is currently monitored by four upgradient wells and 16 downgradient wells (GMP and Unit I and Unit II wells combined). Results of monitoring of these wells continue to show no significant increase in chemical concentrations when comparing analytical results from the upgradient to the downgradient wells. VOCs continue to be detected in both the Site L-B upgradient and downgradient wells at concentrations above maximum contaminant levels (MCLs). The following chemicals have been detected in groundwater samples collected in 2000 from Site L-B upgradient wells and at concentrations exceeding the MCLs: carbon tetrachloride (1.6 to 2.3 ppm) and its breakdown product chloroform (0.16 to 0.22 ppm); and tetrachloroethene (PCE) (0.016 to 0.024 ppm) and its breakdown product trichloroethene (TCE) (0.0086 to 0.012 ppm). Based on investigations conducted to date, the source of the VOCs detected in Site L-B groundwater is the Burlington Northern Santa Fe (BNSF) track area, located upgradient and to the south of Site L-B. Based on the sampling conducted to date, chemicals are migrating downgradient from the BNSF track area. Carbon tetrachloride is detected at concentrations exceeding its MCL along Third Street (0.077 ppm).

USS-POSCO previously held permits for seven former on-site hazardous waste management units. All of the former units have been clean-closed except for HWD-1, which was closed as a landfill with waste in place in accordance with a DTSC-approved Closure and Post-Closure Maintenance Plan, dated April 8, 1994. HWD-1 is now referred to as Unit I. USS-POSCO plans to create a CAMU at the Unit I location. The CAMU will be used for the management of remediation material/soil pursuant to implementing corrective action requirements at the plant.

VOCs have migrated downgradient from the vicinity of the Former Wire Mill, which is located east of Site L-B and somewhat in the middle of the USS-POSCO plant. The source may be from historical spills or leaks associated with operations of the Former Wire Mill. The following chemicals have been detected in 2000 in groundwater samples collected in the immediate vicinity of the Former Wire Mill and at concentrations exceeding the MCLs: TCE (0.83 to 1.2 ppm) and its breakdown products cis-1,2-dichloroethene (cis-1,2-DCE) (0.22 to 0.28 ppm) and vinyl chloride (0.0029 to 0.0063 ppm); 1,1-dichloroethene (1,1-DCE) (0.46 to 0.74 ppm); and 1,1-dichloroethane (1,1-DCA) (0.048 to 0.052 ppm). Based on investigations conducted to date, the lateral extent of this migration has reached Third Street but may not have reached the New York Slough shoreline. TCE (0.071 ppm) and 1,1-DCE (0.2 ppm) have been detected in the groundwater samples collected along Third Street and at concentrations exceeding MCLs. Additional groundwater investigations are in progress. After the investigations are complete, DTSC will evaluate whether groundwater remediation is warranted.

VOCs have been detected along the common property boundary between the USS-POSCO plant and the Dow Chemical (DOW) plant. The following chemicals have been detected in 2000 in groundwater samples collected along the common property boundary between the USS-POSCO plant and the DOW plant and at concentrations exceeding the MCLs: PCE (0.012 to 0.098 ppm) and its breakdown products TCE (0.0074 to 0.033 ppm) and vinyl chloride (0.0022 to 0.0061 ppm); 1,1-DCE (0.026 to 0.033 ppm); and 1,1-DCA (0.0074 to 0.0082 ppm). DOW has proposed additional investigations to further evaluate the lateral and vertical extent of VOC migration along the common property boundary between the two plants.

APPENDIX 1
SWMU SOIL AND GROUNDWATER SAMPLING RESULTS

Soil and groundwater sampling results for SWMUs evaluated during the CMS phase of the corrective action process are discussed below. Note that not all the SWMUs discussed below will be addressed in this phase of corrective action remedy selection. SWMUs with groundwater impact issues will be addressed in the next phase. An additional SWMU (No. 35: Abandoned Wooden Sewer Area) was identified after the completion of the RFI and remediated in 2000 because of leaking oily materials and is also addressed below.

SWMU No. 1: Arsenic Impacted Soils Area

Arsenic concentrations in soils beneath the current surface (compacted gravel or open graded asphaltic concrete with resin impregnation) exceed the site-specific soil cleanup level calculated for the industrial/commercial worker (160 ppm) and the RFI construction worker screening criterion (230 ppm). Arsenic concentrations in soils beneath the current surface have been detected as high as 5,000 ppm at depths from 2.5 to 6 feet below ground surface. Lower concentrations extend to at least 16 feet below ground surface. The estimated volume of arsenic impacted soils is approximately 130,000 cubic yards.

Concentrations of arsenic in groundwater downgradient of this SWMU are similar to upgradient concentrations and are below MCLs (CMS Workplan, November 12, 1999).

SWMU No. 3: Caustic Neutralization Area

Lead concentrations in soils exceed the RFI construction worker screening criterion (1,200 ppm). The highest lead concentration detected is 2,340 ppm at 3 feet below ground surface. Lead concentrations at greater depths were all below the RFI construction worker screening criterion (RFI Final Report, April 7, 1998). The estimated volume of soil exceeding the RFI construction worker screening criterion is approximately 920 cubic yards (Remediation Confirmation Sampling Analysis Plan, August 3, 2001).

Metals have had no substantial effect to date on groundwater quality.

SWMU No. 4: Former Wire Mill Building

Because VOC concentrations in groundwater exceed MCLs and have migrated downgradient from this SWMU, additional groundwater investigations are warranted to evaluate the lateral and vertical extent of VOC migration. These investigations are in

progress. After the investigations are complete, DTSC will evaluate whether groundwater and/or soil remediation is warranted.

VOCs have migrated downgradient from the vicinity of the Former Wire Mill. The following chemicals have been detected in 2000 in groundwater samples collected in the immediate vicinity of the Former Wire Mill and at concentrations exceeding the MCLs: TCE (0.83 to 1.2 ppm) and its breakdown products cis-1,2-DCE (0.22 to 0.28 ppm) and vinyl chloride (0.0029 to 0.0063 ppm); 1,1-DCE (0.46 to 0.74 ppm); and 1,1-DCA (0.048 to 0.052 ppm). Based on investigations conducted to date, the lateral extent of this migration has reached Third Street but may not have reached the New York Slough shoreline. TCE (0.071 ppm) and 1,1-DCE (0.2 ppm) have been detected in the groundwater samples collected along Third Street and at concentrations exceeding MCLs (Plant-wide Groundwater Monitoring Program Report, 2000 Annual Sampling Event, February 28, 2001).

The source of VOCs detected in groundwater in the immediate vicinity of the Former Wire Mill may be from historical spills or leaks associated with operations of the Former Wire Mill. Soil samples were collected from beneath and within the vicinity of the Former Wire Mill and analyzed for VOCs. The VOCs detected and their respective concentration ranges are as follows:

TCE (<0.005 to 0.952 ppm), 1,1,1- trichloroethane (<0.005 to 0.772 ppm)
1,1-DCE (<0.005 to 0.0059 ppm), cis-1,2-DCE (<0.005 to 0.006 ppm)
1,1-DCA (<0.005 to 0.014 ppm), carbon disulfide (<0.01 to 0.013 ppm)
2-butanone (<0.01 to 0.033 ppm), acetone (<0.05 to 0.215 ppm)

Locally high groundwater elevations are typically observed in the vicinity of the Former Wire Mill varying from near the ground surface to a depth of 5.7 feet. VOC concentrations in soil appear to be in equilibrium with concentrations detected in groundwater in the vicinity of the Former Wire Mill [Soil Sampling, Former Wire Mill (Building A), April 16, 2001]

SWMU No. 6.1: Old Central Coil Storage Area

Concentrations of potentially carcinogenic PAHs in soils exceed the RFI construction worker screening criterion of 22 ppm. The highest potentially carcinogenic PAH concentration detected is 30.21 ppm at 2 feet below ground surface. Concentrations of potentially carcinogenic PAHs at greater depths were all below the RFI construction worker screening criterion (RFI Final Report, April 7, 1998). The estimated volume of soil exceeding the RFI construction worker screening criterion is approximately 120 cubic yards (Remediation Confirmation Sampling Analysis Plan, August 3, 2001).

No determination has been made to date regarding groundwater impacts from this SWMU.

SWMU No. 6.2: New Coil Marshaling Area

Arsenic is detected at concentrations below its MCL downgradient at GMP well N-07R. Arsenic is detected at concentrations above its MCL at GMP well N-07 (a well located upgradient of GMP well N-07R and closer to the SWMU).

Downgradient detections of arsenic in groundwater, in the vicinity of GMP well N-07, exceed the arsenic MCL (0.05 ppm). The highest concentration detected has been 0.12 ppm. Since the completion of the RFI Final Report, further evaluation of the groundwater in the vicinity of GMP well N-07 has been conducted as part of the plant-wide GMP. A new well, N-07R, was installed further downgradient and closer to the New York Slough in 1998. Based on the samples collected and analyzed to date, the concentration range of arsenic in well N-07R is 0.017 to 0.033 ppm (CMS Workplan, November 12, 1999).

Arsenic concentrations in soils beneath the current surface (compacted gravel or open graded asphaltic concrete with resin impregnation) exceed the RFI background screening criterion (24 ppm). Arsenic concentrations range from 3 to 130 ppm and extend to average depth of 15 feet below ground surface (CMS Workplan, November 12, 1999).

SWMU No. 8: Coal Tar Pitch Product and Impacted Soils

Benzene and potentially carcinogenic PAH concentrations in coal tar pitch product beneath the current surface (i.e., concrete-paved parking area) exceed the site-specific soil cleanup levels calculated for the industrial/commercial worker (benzene: 9.1 ppm, and potentially carcinogenic PAHs: 6.3 ppm) and the RFI construction worker screening criterion for benzene (90 ppm) and potentially carcinogenic PAHs (22 ppm). The benzene and potentially carcinogenic PAH concentrations detected in the coal tar pitch product were 150 ppm and 2,260 ppm, respectively. A concrete vault or sump, the top of which is located approximately two feet below the current surface, is suspected of containing the coal tar pitch product. The vault/sump is estimated to be approximately 15 feet to 20 feet in diameter with a depth of at least five feet (RFI Final Report, April 7, 1998). Based on these dimensions, the estimated volume of coal tar pitch product within the vault/sump is approximately 60 cubic yards (Remediation Confirmation Sampling Analysis Plan, August 3, 2001).

Concentrations of potentially carcinogenic PAH in soils beneath the current surface exceed the PAH site-specific soil cleanup level calculated for the industrial/commercial

worker and the RFI construction worker screening criterion for potentially carcinogenic PAHs. The highest potentially carcinogenic PAH concentration detected in the soils beneath the current surface is 686 ppm (RFI Final Report, April 7, 1998). The estimated volume of soil exceeding the potentially carcinogenic PAH site-specific soil cleanup level calculated for the industrial/commercial worker and the RFI construction worker screening criterion for potentially carcinogenic PAHs is approximately 2,800 cubic yards (CMS Workplan, November 12, 1999).

Solubility tests using deionized water and acid rain simulations were run on coal tar pitch product samples. Soluble concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX) and PAHs ranged from non-detect to 0.76 ppm for PAHs and from non-detect to 0.0034 ppm for BTEX. Based on these results, PAHs and BTEX have a potential to impact groundwater in the vicinity of this SWMU. PAHs and BTEX were detected in temporary probe collected groundwater samples obtained immediately downgradient of this SWMU. Only benzene was detected at concentrations (range: 0.0018 to 0.0020 ppm) above its MCL (0.0010 ppm). Benzene, however, was not been detected at the plant-wide GMP well located further downgradient (RFI Final Report, April 7, 1998).

SWMU No. 17.1: Former Power Substation No. 1 Area

The cleanup of PCB remediation waste is regulated by RCRA and also by the Toxic Substances Control Act (TSCA). TSCA regulations for PCBs are codified in 40 CFR, Sections 750 and 761 (i.e., the MEGA Rule).

PCB concentrations in SWMU soils exceed the RFI industrial/commercial worker screening criterion of 2.2 ppm and the PCB self-implementing soil cleanup level of 25 ppm as specified by the MEGA Rule for low occupancy areas. The highest reported concentration of PCB in SWMU soils is 55 ppm, at 0.5 feet below ground surface. PCB concentrations are below 25 ppm but greater than 2.2 ppm at the maximum depth of investigation (4 feet) (CMS, August 2, 2000). The estimated volume of soil exceeding the PCB self-implementing soil cleanup level of 25 ppm is approximately 22 cubic yards.

PCBs have not been detected in groundwater samples collected downgradient of the SWMU (CMS, August 2, 2000).

SWMU No. 24.1: Site L-A - Dried Sludge Disposal Areas

Arsenic concentrations in dried sludge and underlying soils exceed the site-specific soil cleanup level calculated for the industrial/commercial worker (160 ppm) and the RFI construction worker screening criterion (230 ppm). The highest reported concentration of arsenic in dried sludge is 1,200 ppm and in underlying soils is 440 ppm (CMS Workplan,

November 12, 1999). The estimated area and volume of dried sludge is approximately 13 acres and 81,000 cubic yards, respectively. Dried sludge was deposited on the ground surface. The estimated area and volume of underlying soils exceeding the site-specific soil cleanup level calculated for the industrial/commercial worker for arsenic and the RFI construction worker screening criterion for arsenic is approximately 0.5 acre and 800 cubic yards, respectively (Remediation Confirmation Sampling Analysis Plan, August 3, 2001).

Groundwater monitoring of Site L-A was conducted as part of the RFI. In general, the downgradient concentrations of the COCs were within the same order of magnitude as the upgradient concentrations. Organics were not detected (except for one detection of TPH as diesel at an upgradient monitoring well). Metal concentrations did not exceed MCLs. The range of arsenic concentrations upgradient was non-detect to 0.0064 ppm and downgradient was non-detect to 0.0099 ppm (RFI Final Report, April 7, 1998).

SWMU No. 24.2: Open Hearth Furnace Slag Disposal Area

This is a 53 acre area which is suspected of containing lead above construction worker screening levels of 1200 ppm. Random sampling of the area identified a number of locations with lead levels above industrial/commercial cleanup levels (5500 ppm) and/or construction worker screening levels (1200 ppm). These areas are identified as SWMU No. 24.3 (see below). This SWMU is being deed restricted for construction worker health and safety requirements as a precautionary remedy only because of the size and history of this SWMU indicates a significant possibility of remaining pockets of residual lead scale above construction worker screening levels. This area will be deed restricted requiring a SSHSP be prepared prior to any future grading or excavation at this SWMU. The SSHSP will identify appropriate personal protective equipment for construction workers.

Groundwater downgradient of this SWMU has not shown impacts from lead contamination.

SWMU No. 24.3: Site L-A - Lead Scale Disposal Areas

This SWMU is composed of a number of areas with site L-A. (See figure 1 for clarification). Lead concentrations in lead scale beneath the current cover (soil and slag) exceed the site-specific soil cleanup level calculated for the industrial/commercial worker (5,500 ppm) and the RFI construction worker screening criterion (1,200 ppm) (CMS Workplan, November 12, 1999). The highest reported concentration of lead in lead scale is 87,000 ppm. The estimated volume of lead scale is 200 cubic yards (Remediation Confirmation Sampling Analysis Plan, August 3, 2001).

Groundwater monitoring of Site L-A was conducted as part of the RFI. Lead was

not detected upgradient or downgradient (RFI Final Report, April 7, 1998). Groundwater data for the one Eastern location, 24.3E, indicate that there have been no impacts to groundwater from this portion of the SWMU. Groundwater monitoring wells for those areas making up the three Central locations, identified as SWMU 24.3C, wells are considered too far distant from the SWMU, and therefore, groundwater impacts are considered indeterminate. Therefore, this SWMU is being handled as two separate SWMUs: 24.3E and 24.3C.

SWMU No. 24.5: Site L-A - Oil Disposal Area #1

Arsenic concentrations in Oil Disposal Area (ODA) #1 oily waste exceed the site-specific soil cleanup level calculated for the industrial/commercial worker (160 ppm) and the RFI construction worker screening criterion (230 ppm). In addition, PCB concentrations in ODA #1 oily waste exceed the PCB self-implementing soil cleanup level of 25 ppm as specified by the MEGA Rule for low occupancy areas. The highest reported concentrations of arsenic and PCBs in ODA #1 oily waste are 291 ppm and 88 ppm, respectively (CMS, August 2, 2000). The estimated volume of ODA #1 oily waste is approximately 1,040 cubic yards (Notice - Self-Implementation of On-Site Cleanup and Disposal of PCB Remediation Material/Soil, August 3, 2001).

Groundwater monitoring of Site L-A was conducted as part of the RFI. In general, the downgradient concentrations of the chemicals monitored were within the same order of magnitude as the upgradient concentrations. Organic (including PCBs) were not detected (except for one detection of TPH as diesel at an upgradient monitoring well). Metal concentrations did not exceed MCLs. The range of arsenic concentrations upgradient was non-detect to 0.0064 ppm and downgradient was non-detect to 0.0099 ppm (RFI Final Report, April 7, 1998).

SWMU No. 24.5: Site L-A - Oil Disposal Areas #3 and #4

Arsenic concentrations in ODA #3 and #4 oily waste exceed the site-specific soil cleanup level calculated for the industrial/commercial worker for arsenic (160 ppm) and the RFI construction worker screening criterion (230 ppm). The highest reported concentration of arsenic in ODA #3 and #4 oily waste is 408 ppm (CMS, August 2, 2000). The estimated volume of ODA #3 and #4 oily waste is approximately 4,100 cubic yards (CMS, August 2, 2000). One soil sample in oil disposal area #3 had the following level of VOCs commonly associated with TPH: ethylbenzene: 2.5 ppm; toluene, 1.3 ppm, and xylene, 23 ppm.

Solubility tests using deionized water and acid rain simulations were run on ODA #3 oily waste samples. Soluble concentrations of O&G were not detected. (Letter Report – Leach Testing of Oily Waste from SWMU No. 24.5 – ODA #3, September 4, 2001).

Groundwater monitoring of Site L-A was conducted as part of the RFI. In general, the downgradient concentrations of the chemicals monitored were within the same order of magnitude as the upgradient concentrations. Organic were not detected (except for one detection of TPH as diesel at an upgradient monitoring well). Metal concentrations did not exceed MCLs. The range of arsenic concentrations upgradient was non-detect to 0.0064 ppm and downgradient was non-detect to 0.0099 ppm (RFI Final Report, April 7, 1998). For ODA #3, well data indicates that there has been no impacts to groundwater from this unit. However, monitoring wells are considered too far distant from ODA #4 to make a determination of the potential for groundwater impacts from this portion of the SWMU. Therefore, this SWMU is being handled as two separate SWMUs; 24.5-3 and 24.5-4.

SWMU No. 24.8: Site L-A - Lead Impacted Area

Lead concentrations in the lead impacted area beneath the current soil cover exceed the site-specific soil cleanup level calculated for the industrial/commercial worker (5,500 ppm) and the RFI construction worker screening criterion (1,200 ppm). The highest reported concentration of lead in soil beneath the current cover is 25,500 ppm (CMS Workplan, November 12, 1999). The estimated volume of lead impacted soil is 7,500 cubic yards (Remediation Confirmation Sampling Analysis Plan, August 3, 2001).

Groundwater monitoring of Site L-A was conducted as part of the RFI. Lead was not detected upgradient or downgradient (RFI Final Report, April 7, 1998).

SWMU No. 35: Abandoned Wooden Sewer Area

In a letter report submitted to DTSC on November 27, 2000, USS-POSCO documented the remediation of an abandoned wooden sewer leaking oily materials. Materials/soils (approximately 600 cubic yards) from this remediation project are currently stockpiled awaiting final disposition. The stockpile was placed on and covered with plastic.

Impacted soil from this SWMU has been excavated and has been stored on-site. The excavation and confirmation sampling report dated November 27, 2000 documents this action. These impacted soils have petroleum hydrocarbons which are not classified as hazardous waste. The volume of waste excavated from this SWMU is approximately 600 cubic yards. Soils excavated from this SWMU have levels of up to 94,000 ppm TPH (Bunker C fuel oil). Soils left in place have concentrations of TPH (Bunker C fuel oil) of up to 22,000 ppm. Remediation of these soils and waste materials will be address in the next phase of corrective action.

attachments: figure 1 - SWMU map,
figure 2 - CAMU footprint,
figure 3 - CAMU cross-section